PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

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NOTIFICATION CONCERNING
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PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

To

FEIGENBAUM, David L. Fish & Richardson P.C. P.o. Box 1022 Minneapolis, mn 55440 ETATS-UNIS D'AMERIQUE

Date	of mailing		(day month/year)		
	28	April	2011	(28.04)	.2011)

Applicant's or agent's file reference 12144-029WO1

IMPORTANT NOTICE

International application No. PCT/US2006/047524

International filing date (day/month/year)
13 December 2006 (13.12.2006)

Priority date (day/month/year)
16 December 2005 (16.12.2005)

Applicant

AIRVANA, INC. et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

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NAVEGEN (2007)

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 12144-029WO1	FOR FURTHER ACTION	See item 4 below		
International application No. PCT/US2006/047524	International filing date (day/month/year) 13 December 2006 (13.12.2006)	Priority date (day/month/year) 16 December 2005 (16.12.2005)		
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237				
Applicant AIRVANA, INC.				

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).			
2.	 This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead. 			
3.	3. This report contains indications relating to the following items:			
	\mathbf{X}	Box No. I	Basis of the report	
1		Box No. II	Priority	
		Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	
		Box No. IV	Lack of unity of invention	
	X	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
		Box No. VI	Certain documents cited	
		Box No. VII	Certain defects in the international application	
		Box No. VIII	Certain observations on the international application	
4.	but not		communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 dicant makes an express request under Article 23(2), before the expiration of 30 months from 2).	

	Date of issuance of this report 19 April 2011 (19.04.2011)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Beate Giffo-Schmitt
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PATENT COOPERATION TREATY

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DAVID L. FEIGENBAUM	1		
FISH & RICHARDSON P.C.	l w	RITTEN OPINION OF THE	
P.O. BOX 1022 MINNEAPOLIS, MN 55440	INTERNAT	TIONAL SEARCHING AUTHORITY	
		(PCT Rule 43bis.1)	
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	Date of mailing (day/month/year	6 MAY 2009	
Applicant's or agent's file reference	FOR FURTHER ACTION		
12144-029WO1		See paragraph 2 below	
International application No. International filing date	te (day/month/year)	Priority date (day/month/year)	
PCT/US2006/047524 13 December 200	06	16 December 2005	
International Patent Classification (IPC) or both national classific IPC(8) - H04Q 07/00 (2008.04) USPC - 370/331	cation and IPC		
Applicant			
AIRVANA, INC.			
1. This opinion contains indications relating to the following it	ems:	,	
Box No. I Basis of the opinion	•		
Box No. II Priority			
Box No. III Non-establishment of opinion with reg	gard to novelty, inventi	ve step and industrial applicability	
Box No. IV Lack of unity of invention			
Box No. V Reasoned statement under Rule 43bis. citations and explanations supporting		velty, inventive step or industrial applicability;	
Box No. VI Certain documents cited			
Box No. VII Certain defects in the international app	plication		
Box No. VIII Certain observations on the internation	•		
Box 140. 4111 Certain observations on the internation	na application		
2. FURTHER ACTION			
If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.			
If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form			
PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220.			
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3. For further details, see notes to Form PCT/ISA/220.			
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Name and mailing address of the ISA/US Date of completion of Mail Stop PCT, Attn: ISA/US	inis opinion	Authorized officer:	
Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450	008	Blaine Copenheaver	
Facsimile No. 571-273-3201	/	PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774	

Form PCT/ISA/237 (cover sheet) (April 2007)

PCT/US2006/047524 26.05.2009

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US2006/047524

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US2006/047524

		nder Rule 43 <i>bis.</i> 1(a)(i) with regard to novelty, inventive step or industrial applicability; lions supporting such statement		
I. Statement				
Novelty (N)	Claims	16, 18, 45, 47	YES	
• • •	Claims	1-15, 17, 19-44, 46	NO	
Inventive step (IS)	Claims	None	YES	
	Claims	1-47	NO	
Industrial applicabi	lity (IA) Claims	1-47	YES	
	Claims	None	NO NO	
2. Citations and explanat	ions:			
Claire 1 15 17 10 44 and 4	6 lack assolts upday BCT	Article 22(2) on being entisiented by Everbeeling	ot at /LIC 2004/0214574 A1:	

Claims 1-15, 17, 19-44 and 46 lack novelty under PCT Article 33(2) as being anticipated by Eyuboglu et al. (US 2004/0214574 A1, Eyuboglu).

Regarding claim 1, Eyuboglu discloses a method comprising in a radio access network including subnets (Abstract and Fig. 2), in which at least one of the subnets includes a radio node controller (Abstract, Fig. 2 and Paragraphs (0024) and (0028); has subnets in the RNC), enabling the radio node controller of one subnet to send a communication to an access terminal over a control channel through the infrastructure of another subnet (Abstract, Fig. 2 and Paragraphs (0024), [0028] and [0076]; RNC sends communication to other subnet).

Regarding claim 2, Eyuboglu discloses the method of claim 1 in which the communication comprises packets (Paragraph [0025]; communicates with packets).

Regarding claim 3, Eyuboglu discloses the method of claim 1 in which the infrastructure includes a radio node controller (Abstract and Fig. 2; uses a radio node controller).

Regarding claim 4, Eyuboglu discloses the method of claim 1 in which the: access terminal is in an idle state (Paragraph [0018]; terminal is in a dormant state).

Regarding claim 5, Eyuboglu discloses the method of claim 1 in which the, communication sent over the control channel comprise a paging message (Paragraph [0034]; uses paging messages).

Regarding claim 6, Eyuboglu discloses the method of claim 1 in which the communication sent over the control channel comprise a UATI-Assignment message (Paragraph (0096); uses a UATI assignment message).

Regarding claim 7, Eyuboglu discloses the method of claim 1 in which the communication sent over the control channel comprise a TrafficChannelAssignment message (Paragraph [0035]; uses a TrafficChannelAssignment message).

Regarding claim 8, Eyuboglu discloses the method of claim 1 further comprising notifying, by the access terminal, the radio node controller of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 9, Eyuboglu discloses the method of claim 1 further comprising notifying, by the access terminal, the radio node controller of information about pilot strengths of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 10, Eyuboglu discloses the method of claims 8 or 9 in which the notification is sent as a route update message (Paragraph [0033] and [0035]; sends route update messages).

Regarding claim 11, Eyuboglu discloses the method of claim 9 further comprising determining, based on the pilot strengths, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 12, Eyuboglu discloses the method of claim 11 further comprising enabling the radio node controller to send a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the radio node controller (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

Supplemental Box

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Box No. V

2. Citations and explanations:

Regarding claim 13, Eyuboglu discloses a method comprising, in a radio access network including a first and a second subnet, in which the first subnet includes a first radio node controller (20 of Fig. 1; first subnet uses a first RNC), enabling the first radio node controller to maintain an open traffic channel with an access terminal when the access terminal moves from a coverage area of the first subnet to a coverage area of the second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Paragraph [0080]; the terminal can move from a first coverage area to a second coverage area).

Regarding claim 14, Eyuboglu discloses the method of claim 13 in which each of the carriers comprises an operating frequency (Paragraph (0021); uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 15, Eyuboglu discloses the method of claim 13 in which radio nodes in the first subnet are configured in accordance with one 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 17, Eyuboglu discloses a method comprising in a radio access network including a first and a second subnet (Abstract and Figs. 1-2), in which the first subnet includes both a first radio node controller and radio nodes (Fig. 1; has both an RNC and RNs) that are configured in accordance with one 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and the second subnet includes radio nodes configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO (IOS standard), enabling the first radio node controller to maintain an open traffic channel with an access terminal when the access terminal moves from the coverage area of the first subnet to the coverage area of the second subnet (Paragraph [0080]; the terminal can move from a first coverage area to a second coverage area).

Regarding claim 19, Eyuboglu discloses an apparatus comprising a processor (Paragraph (0015); uses a data processing apparatus), memory (Paragraph (0067); the RNC Resource Control Agent is responsible for storing session information), including software to provide instructions to the processor to send packets to an access terminal over a control channel through the infrastructure of a subnet that is not the one to which the apparatus belongs (Paragraph (0015); uses software instructions to allow a terminal access to other subnets).

Regarding claim 20, Eyuboglu discloses the apparatus of claim 19 in which the software provides further instructions to the processor to receive notification by the access terminal of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 21, Eyuboglu discloses the apparatus of claim 19 in which the software provides further instructions to the processor to receive notification from the access terminal of information about pilot strengths of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 22, Eyuboglu discloses the apparatus of claim 21 in which the software provides further instructions to the processor to determine, based on the pilot strengths, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 23, Eyuboglu discloses the apparatus of claim 22 in which the software provides further instructions to the processor to enable the apparatus to send a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the apparatus (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

Regarding claim 24, Eyuboglu discloses an apparatus (Abstract) comprising means for sending a communication to an access terminal over a control channel through an infrastructure of a subnet that is not the one to which the apparatus belongs (Paragraph [0015]; uses software instructions to allow a terminal access to other subnets).

Regarding claim 25, Eyuboglu discloses the apparatus of claim 24 further comprising means for receiving notification from the access terminal of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 26, Eyuboglu discloses the apparatus of claim 24 further comprising means for receiving notification from the access terminal of information about pilot strengths of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 27, Eyuboglu discloses the apparatus of claim 26 further comprising means for determining, based on the pilot strengths, to which sectors to send a communication over the control channel to the access terminal (Paragraphs (0035) and (0079-0080); sends communication based on the pilot strengths).

Regarding claim 28, Eyuboglu discloses the apparatus of claim 27 further comprising means for sending a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the apparatus (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

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PCT/US2006/047524 26.05.2009

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No PCT/US2006/047524

Supplemental Box

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Regarding claim 29, Eyuboglu discloses a system comprising, a packet data serving node connected to a network (Abstract and Paragraph [0025]; communicates with packets); at least two subnets, each subnet including, at least one radio node controller connected to the packet data serving node (Figs. 1-2; has a RNC connected to the packet node) and, at least one radio node connected to a radio node controller in the same subnet (Figs. 1-2; has two RNs connected to the RNC), in which the radio node controllers are enabled to send a communication to an access terminal over a control channel through the infrastructure of another subnot (Abstract, Fig. 2 and Paragraphs [0024], [0028] and [0076]; RNC sends communication to other subnot).

Regarding claim 30. Eyuboglu discloses the system of claim 29 in which the radio node controllers receive notification from the access terminal of sectors that are visible to the access terminal (Paragraph [0025]; the RNC has sectors visible to other RNs and RNCs in the radio access network).

Regarding claim 31, Eyuboglu discloses the system of claim 29 in which the radio node controllers receive notification from the access terminal of information about pilot strength's of sectors that are visible to the access terminal (Paragraph [0035]; the RNC examines the pilot strengths of sectors).

Regarding claim 32, Eyuboglu discloses the system of claim 31 in which the radio node controllers determine, based on the pilot strength, to which sectors to send a communication over the control channel to the access terminal (Paragraphs [0035] and [0079-0080]; sends communication based on the pilot strengths).

Regarding claim 33, Eyuboglu discloses the system of claim 32 in which the radio node controllers send a communication to the access terminal over a control channel via sectors chosen based on their pilot signal strengths as reported by the access terminal (Paragraph [0035]; sends a communication based on pilot strengths), where at least one chosen sector is located in a different subnet than the radio node controller (Paragraphs [0019] and [0035]; can broadcast from a first and second subnet to a third different subnet).

Regarding claim 34. Eyuboglu discloses an apparatus comprising, a processor (Paragraph [0015]; uses a data processing apparatus), memory (Paragraph [0067]; the RNC Resource Control Agent is responsible for storing session information) including software to provide instructions to the processor to maintain an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas).

Regarding claim 35, Eyuboglu discloses the apparatus of claim 34 connected to a network in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 36, Eyuboglu discloses the apparatus of claim 34 connected to a network in which radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1 xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 37, Eyuboglu discloses an apparatus (Abstract) comprising means for maintaining an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet and the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas).

Regarding claim 38, Eyuboglu discloses the apparatus of claim 37 connected to a network in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 39, Eyuboglu discloses the apparatus of claim 37 connected to a network in which radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 40, Eyuboglu discloses a system (Abstract) comprising, a packet data serving node connected to a network (Abstract and Paragraph [0025]; communicates with packets); at least two subnets, each subnet including, at least one radio node controller connected to the packet data serving node (Figs. 1-2; has a RNC connected to the packet node) and, at least one radio node connected to a radio node controller in the same subnet (Figs. 1-2; has two RNs connected to the RNC), in which a first radio node controller located in a first subnet maintains an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet to a coverage area of a second subnet and when the access terminal uses a carrier in the first subnet that cannot be used in the second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas).

Regarding claim 41, Eyuboglu discloses the system of claim 40 in which each of the carriers comprises an operating frequency (Paragraph [0021]; uses an operating frequency that conforms to the EV-DO standard).

Regarding claim 42, Eyuboglu discloses the system of claim 40 in which radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

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PCT/US2006/047524 26.05.2009

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US2008/047524

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Regarding claim 43, Eyuboglu discloses an apparatus comprising a processor (Paragraph [0015]; uses a data processing apparatus), memory (Paragraph [0067]; the RNC Resource Control Agent is responsible for storing session information), including software to provide instructions to the processor to maintain an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is located to a coverage area of a second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas) and radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 44, Eyuboglu discloses an apparatus comprising means for maintaining an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet where the apparatus is 1ocated to a coverage area of a second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas) and radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard) and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Regarding claim 46, Eyubogiu discloses a system comprising, a packet data serving node connected to a network (Abstract and Paragraph [0025]; communicates with packets); at least two subnets, each subnet including, at least one radio node controller connected to the packet data serving node (Figs 1-2; has a RNC connected to the packet node) and, at least one radio node controller connected to a radio node controller in the same subnet (Figs. 1-2; has two RNs connected to the RNC), in which a first radio node controller located in a first subnet maintains an open traffic channel with an access terminal when the access terminal moves from a coverage area of a first subnet to a coverage area of a second subnet (Abstract, Fig. 1 and Paragraphs [0015] and [0080]; uses software instructions to allow a terminal access to other subnets in other coverage areas) and radio nodes in the first subnet are configured in accordance with a 1xEV-DO standard (Paragraph [0021]; conforms to the 1xEV-DO standard and radio nodes in the second subnet are configured in accordance with another 1xEV-DO standard (Paragraphs [0020] and [0077]; conforms to the 1xEV-DO IOS standard).

Claims 16, 18, 45 and 47 lack an inventive step under PCT Article 33(3) as being obvious over Eyuboglu et al. (US 2004/0214574 A1; Eyuboglu).

Regarding claims 16, 18, 45 and 47, Eyuboglu discloses the methods apparatus and system of claims 15, 17, 43 or 44, and 46. Eyubolu does not explicitly disclose in which radio nodes in the first subnet are configured in accordance with the 1 xEV-DO Rev- A standard and radio nodes in the second subnet are configured in accordance with the 1xEV-DO Rev- Ostandard. However configuring subnets to operate over different versions of a standard is a known practice in the art. Furthermore, the specifics (having a first subnet configured in accordance with the 1 xEV-DO Rev- A standard and radio nodes in the second subnet are configured in accordance with the 1xEV-DO Rev-0 standard) is a matter of design choice. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein s first subnet is configured in accordance with the 1 xEV-DO Rev- A standard and radio nodes in the second subnet are configured in accordance with the 1xEV-DO Rev-0 standard in the invention of Eyuboglu, so that the system can operate over multiple standards.

Claims 1-47 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in Industry.